NATIONAL WEATHER SERVICE
WESTERN REGION
SALT LAKE CITY, UTAH

JANUARY 11, 2002

REGIONAL DIRECTOR

It is less than a month until the Olympics in Salt Lake City. For the first time ever, Olympic Weather Forecasting will be done by a partnership between the National Weather Service, KSL Television (local NBC Affiliate), and the University of Utah. Each partner will contribute to the forecast process and the goal is to show that government, private sector, and academia can work together to provide a first-class product. WFO Salt Lake will be hosting the Weather Operations Center (WOC) which will consist of NWS forecasters and KSL forecasters working side by side. Tim Barker from Missoula, Randy Graham from Grand Rapids (formerly from Salt Lake), Tom Niziol from Buffalo, Joel Cline from Raleigh, and Dave Schultz from NSSL are the additional forecasters that will be augmenting the WFO Salt Lake staff and will work primarily with the KSL forecasters. Several of the regional office staff will also be helping to make the Olympic forecasting a success.

METEOROLOGICAL SERVICES DIVISION

STATEMENT OF THE WEEK: This week's statement of the week is an outlook statement written by lead forecast Mike Smith. Mike did a nice job explaining what was expected from an incoming weather system, keeping meteorological reasoning to a mere mention of another "Pacific Frontal System." Good job Mike!

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SPECIAL - WEATHER STATEMENT
NATIONAL WEATHER SERVICE SACRAMENTO CA
500 AM PST MON JAN 7 2002

...ANOTHER STORM HEADED FOR NORTHERN CALIFORNIA...

ANOTHER PACIFIC FRONTAL SYSTEM IS HEADED FOR NORTHERN CALIFORNIA. THIS SYSTEM WILL BEGIN BRINGING PRECIPITATION TO THE NORTHERN MOUNTAINS AS EARLY AS THIS AFTERNOON THEN MOVE INTO THE SIERRA NEVADA BY TUESDAY MORNING. SNOW LEVELS WITH THIS SYSTEM WILL BE

QUITE HIGH BEGINNING AT AROUND 7,000 FEET OR HIGHER THEN ONLY DROPPING TO AROUND 5,000 TO 6,000 FEET AS THE SYSTEM PASSES. THIS IS A MODERATELY WET SYSTEM BUT HAS THE POTENTIAL TO PRODUCE SHORT PERIODS OF HEAVY RAIN OR HIGH ELEVATION SNOW. AREAS OF THE NORTHERN SACRAMENTO VALLEY COULD RECEIVE AN INCH OR MORE OF RAINFALL BETWEEN THIS EVENING AND TUESDAY AFTERNOON WITH LIGHTER AMOUNTS OF PRECIPITATION FARTHER SOUTH. SEVERAL INCHES TO A FOOT OF NEW SNOW ARE POSSIBLE IN THE NORTHERN MOUNTAINS AND SIERRA CASCADES BUT THE BULK OF THE SNOWFALL WILL BE ABOVE THE 6,000 FOOT LEVEL.

PERSONS TRAVELING IN NORTHERN CALIFORNIA THIS EVENING THROUGH TUESDAY SHOULD MONITOR THIS WEATHER SITUATION BY LISTENING TO NOAA WEATHER RADIO OR BY GOING TO OUR WEBSITE AT: WWW.WRH.NOAA.GOV/SACRAMENTO (ALL IN LOWER CASE)

HYDROLOGICAL SERVICES DIVISION

Western Region RFC Flash Flood Guidance Team Formed: Investigations by Western Region RFCs into soil moisture based methods of generating Flash Flood Guidance (FFG), i.e., modernized FFG and ThreshR, have raised some questions about the validity of using these approaches in the West. Results have shown that the specific area and rainfall intensity may be more of a factor in the occurrence of flash flooding than the antecedent soil moisture conditions. Also, issues regarding the scale of flash flood events as opposed to the hydrologic calibrations used by such methods have been identified.
A Western Region team has been formed with representatives from all three RFCs to examine alternative approaches to providing operational assistance to WFOs in evaluating potential flash flood events. Specifically, the team will explore possibilities of using Geographic Information Systems (GIS) to delineate flash flood prone areas and mechanisms for determining appropriate rainfall intensity thresholds for such areas. The goal of the Team is to determine if an operational approach using GIS and rainfall intensity is feasible, and, if so, what steps will need to be taken to implement such an approach.

WFO Hydrology Product Header Changes: On January 15, 2002, all Western Region WFOs will be switching the headers on their Hydrology Products to end state PILs and correct WMO headers. For a list of the new headers, visit the following web site: http://ww2.wrh.noaa.gov/public/Hydwmo/index.htm.

CLIMATE SERVICES

Climate Services Steering Committee: Nominations for the Climate Services Steering Committee are due to Andrea Bair by January 15, 2002. To date, no WCMs have been nominated. It would be

advantageous to have a WCM on the committee, because the committee will look at customer needs related to climate services. This committee is being assembled to "steer" how Western Region will provide Climate Services in the future. Nominees should have an interest in climate, and it is helpful if they possess a general knowledge of the science behind some of the climate issues that the NWS deals with. Please notify Andrea Bair if you should need further information.

Climate Partnership Program: The Climate Services Division (CSD) at NWS Headquarters, together with the Climate Prediction Center (CPC), will host a two-week visiting program called the Climate Partnership Program. There is room for about two individuals per month to participate. Participants must apply for the program after seeking approval from their MIC/HIC/supervisor (it will be two weeks away from the office). Participants will be required to make a presentation at both CPC and CSD about why they are interested in developing a partnership for climate services between their local office, CPC, and CSD. This two-week program is set up for sharing ideas and concerns from a local office perspective, while learning about the products and services that are produced at a national level. If you would like more details about the program, please contact Andrea Bair at WRH. The program is explained in detail on the CSD homepage at: http://205.156.54.206/om/csd/visitors/index.html.

SCIENTIFIC SERVICES DIVISION

NCEP Backup Test: A test of the quarterly site outage backup processing has been scheduled for Wednesday, January 23, 2002. The test will occur during the 12 UTC model cycle and last approximately 6 hours. During the backup processing, products will be made available from FSL and UKMET, and products will be made from FNMOC and AFWA data. This test affects the Eta, AVN, RUC2, RSAS, and NWW3 (wave) models. At the conclusion of the test, the 12 UTC NGM and NGM MOS products will be disseminated approximately 6 hours late. For additional information regarding the NCEP's site outage backup processing, visit the following web site:

http://www.ncep.noaa.gov/NCO/PMB/docs/ncep_backup.html

If critical weather develops on January 23, the backup test will be attempted on the following day. This exercise is necessary to ensure continue flow of model guidance in case of a site outage. Your continued patience and cooperation during these quarterly tests is greatly appreciated.

Summary of This Year's NCEP Review: Here is a summary of this year's NCEP review. To keep it somewhat short, only the

highlights are mentioned.

In general, this has been one of the most productive years ever at Environmental Modeling Center (EMC). Of note are impressive improvements to the global modeling system, improvements to both the seasonal climate forecast modeling and hurricane modeling systems, the implementation of the Short Range Ensemble Forecast system (SHREF) and the Coastal Forecast System (COFS), and the increased resolution of the operational ETA.

Focus for EMC will continue on putting good science into operations before implementation of model changes using enhanced pre-implementation criteria, code testing and development, and involvement of the field (forecaster evaluation of model changes). Resources at all the modeling centers will continue to emphasize development on data assimilation, as well as improvements to the code and software that make up the model suites. However, some of this emphasis will shift for the next year, focusing on model physics, diagnostics, ensemble forecasts, coupled modeling systems, and resolution increases. In addition to the new focus areas, there are several new forecast initiatives at NCEP that include air quality, energy initiative and increased operational ocean products. As always, dissemination of products continues to be an issue. NCEP will continue to do all that it can to provide access to the Center's products, as well as acquiring more local data (mesonet and profiler data for example) for inclusion in data assimilation.

The IBM SP is nearing saturation. Procurement for the new system should begin in 12 months. This year's budget allocated 21 million for the new system and 6-8 million for a backup system. It is hoped that the backup system will be available for development and other uses while not in backup mode.

Finally, there is a bit of restructuring going on at NCEP. The Global Modeling Branch and the Climate Modeling Branch will be unifying, forming the Global Climate and Weather Modeling Branch (GCWMB). Part of this unification will involve creating a Climate Team Leader position. In addition, the Ocean Modeling Branch will be getting a new name: the Marine Modeling and Analysis Branch (MMAB). Here are the highlights:

Mesoscale Modeling Branch, EMC

ETA

BUFR soundings are now available for over 1,200 sites (hourly)
  Web page display
  Will be available "soon" in AWIPS
  Want to stop adding sites and "move" existing sites?
Workstation ETA

Non-hydrostatic version released in 2001
Sigma coordinate version released in 2001
32 km Tiles
12 km tiles in development for this year
2002 and beyond
Physics Upgrades
Data assimilation upgrades
88D Radial Velocities
GOES Cloud top Pressure
GPS PW (Hopefully this will help the moisture problems, particularly in data void regions)
Mesonet data (soon - Dennis Keysers code)
Boundary Layer Profilers
High Resolution Windows (New name for the Threats Runs of the Eta)
8 km Non-hydrostatic hybrid vertical coordinate coming very soon
November 2003
Operational ETA - increase to 10 km resolution
HRW _ increase to 6 km resolution (non-hydrostatic, hybrid vertical coordinate)
November 2005
Operational "ETA" _ increase to 8 km resolution
HRW _ increase to 4 km resolution

RUC

20 km RUC testing and implementation (Spring 2002)
Focus is on improving:
QPF
SFC Forecasts
Cloud/icing 3D Fields
Began testing in May 2001
Would like to conduct real_time tests (February 2002)
Will be available to test sites in WR via AWIPS
What's Being Added?
Grell convective parameterization (ensemble)
GOES cloud Data
Revised vertical advection
3DVAR not great results, going back to OI analysis within 3DVAR framework
~ 3 months after 20 km implementation (Late Summer 2002)
New Data sources within Data Assimilation scheme
Boundary Layer profilers
GOES cloud tops
GPS PW
Some question of reliability of this data set
Will fill in data void regions and augment moisture observations (big deal for WR)

WRF

Timeliness and Milestones
See WRF page for status and updates (wrf_model.org)

2000
  Beta version released
  Output available in netCDF and binary formats (soon GRIB)

2001
  Evaluation of alternate vertical coordinate

2002 - Research Suite
  Physics
  3DVAR

2004 - Testing for Operational Version
  NCEP
  FSL
  AFWA

3 sites running real-time versions right now
  NCAR
  AFWA
  NSSL(?)

  Some verification stats online (NSSL)

ETA Dynamics will be frozen over the next year
  Development of model will continue on WRF compatible modules

Global Version of the WRF to replace the AVN
  Parallel development going on with Global and Climate Groups
  for the medium and long ranges

Global Modeling Branch

Major Implementations over the last year:
  February 2001
    Data Assimilation package
  May 2001
    Prognostic cloud-water/ice
    Momentum mixing in cumulus cloud scheme
    Random cumulus cloud top
    Many evaluation statistics for this implementation
      Large improvement to model skill, now very comparable to
      ECMWF in NH

What's coming?
  March/April 2002
    MRF
      T254L64 (out to day 3.5)
      T170L42 (out to day 7.5)
      T126L28 (out to day 16)
    Ensembles
      T126L28 (to day 7.5)
      T62L28 (to day 16)
  New Longwave Radiation Package
    Badly needed, current package is very old.

New Dynamic Core Development
Consolidate AVN and MRF Models (4x/day Global Forecast System)
Includes Ensembles
Really just means increasing the AVN out to 16 days
Probably won't be on SBN
Implement Ocean data assimilation to support seasonal forecast system
Implement coupled model system for SSTs
The goal is to get one-half by one-half(hourly?) data out to 36 hours to the WFOs via AWIPS

If you have any questions, please contact Kirby Cook at WRH.

New Technical Attachment: This week's Technical Attachment(TA) is entitled "A Proposed Gridded QPF Verification Scheme for the GFE in the Western Region," authored by Linda Cheng, Weather Forecast Office, Salt Lake City, Utah. The TA is posted on the National Weather Service Web site at http://www.wrh.noaa.gov, under "Technical Attachments."

SYSTEMS OPERATIONS DIVISION

NOAA WEATHER RADIO: WR NWR RMS, Joe Lachacz, installed a NWR transmitter for the Park City, Utah coverage area on 1/5/02. The new NWR transmitter will be operational by 1/10/02.

ASOS: Ice Accretion: The Operational Acceptance Test (OAT) of software version 2.62I has begun at both Pendleton (PDT), OR and Yakima (YKM), WA and will run through March 1, 2002. There have been a couple of minor icing events; One showed the effect of using incremental ice accretion rather than cumulative ice accretion in the algorithm. If 0.005 inches of ice is not accreted before the hourly scheduled de-icing cycle, the amount of ice counted is zero. On December 28,2001, 0.0029" (occurring between 0500 and 0533 UTC) was lost when the sensor was de-iced at 0533 UTC.

Processor Upgrade, Dewpoint replacement Sensor, software version 2.6A: The dewpoint replacement sensor OAT will be run concurrently with the Processor Upgrade OAT. The initial test site in Western Region will be at Stanely (SNT), ID. The draft mod note and the dewpoint replacement sensor have arrived at the PIH WFO, but a few more parts are needed before the installation can occur. The new dewpoint replacement sensor will be tested alongside the current temperature/dewpoint sensor.

Software version 2.6A will be installed to support the dewpoint replacement sensor. However, version 2.6A also has fixes to problems with the FAA communications system (ADAS) (i.e., 1-minute thunderstorm problem and line-held high communications).

Cooperative Program Holm and Jefferson Awards: Jefferson and Holm award nominations will be requested soon. A package will be sent to all WFOs by the end of January containing sample nomination packages and a list of potential nominees. Remember, coop observers receive little or no money for the observations they take 365 days a year, so awards are an important part of the recognition process.

RADAR: The Open Radar Product Generator (ORPG) will be installed at Yuma, AZ, the week of January 7, 2002, and is scheduled to be installed the week of January 14, 2002, at Phoenix, AZ. However, the ORPG installation team may decide to install ORPG at Phoenix the same week as Yuma if they complete the Yuma installation ahead of schedule.

Wiretap for Dual-thread Radars: Wiretap for dual-thread Radars will be installed concurrently with the ORPG installation. Yuma, AZ, will be the first Western Region dual-thread Radar to receive the wiretap installation.

Quarterly WSR-88D Conference Call: The first quarterly conference call on WSR-88D issues will be January 30, 2002. The main purpose of this conference call is to address operational issues. Maintenance and support issues will be discussed as well. Prior to each conference call, the Radar program manager, Kristine Nelson, will send out an e-mail asking for concerns and/or issues forecast offices would like addressed in this conference call. Attendance will be open to those who wish to present a concern or who would like to listen in on the conference. Kristine Nelson will send out the meet-me conference call number and password by request.